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| APPLICATION NO.           | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------|-------------|----------------------|---------------------|------------------|
| 10/604,095                | 06/26/2003  | Joseph A. Iadanza    | BUR920030013        | 1094             |
| 21918                     | 7590        | 07/13/2004           |                     | EXAMINER         |
| DOWNS RACHLIN MARTIN PLLC |             |                      |                     | CHANG, JOSEPH    |
| 199 MAIN STREET           |             |                      |                     |                  |
| P O BOX 190               |             |                      | ART UNIT            | PAPER NUMBER     |
| BURLINGTON, VT 05402-0190 |             |                      |                     | 2817             |

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                          |                  |
|------------------------------|--------------------------|------------------|
| <b>Office Action Summary</b> | Application No.          | Applicant(s)     |
|                              | 10/604,095               | IADANZA ET AL.   |
|                              | Examiner<br>Joseph Chang | Art Unit<br>2817 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-9 is/are allowed.
- 6) Claim(s) 10-12, 15 and 18 is/are rejected.
- 7) Claim(s) 13, 14, 16, 17, 19 and 20 is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 June 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### ***Claim Objections***

Claim 10 is objected to because of the recitation “and controlled using”. It appears that the recitation needs to change to --and a controlled oscillator using-- because “the oscillator” is referred in Claim 11.

Claim 11 is objected to because of the recitation “the oscillator” which lacks an antecedent basis.

Claim 15 is objected to because of the following informalities:

Claim 15 recites “a)at least” and “i)a plurality”. The notations “a)” and “i)” are not in order and confusing, and should be omitted.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Groen et al. (US 6683502).

Regarding Claim 10, Groen et al. discloses in figures 7 and 8, a method of controlling a phase locked loop (700) having a setup (PLL Process Variation Compensation Unit 730, Loop Filter Bypass 720) and controlled oscillator (710) using a control parameter (control voltage, VCO-C), comprising the steps of: varying the setup of the phase locked loop as a function of a plurality of operating parameters (Col.2, lines 46-61, see also Col.2, lines 1-5, 15-16); and substantially centering the control parameter to a pre-selected value (“the control voltage is set to zero” for the center frequency adjustment; Col.2, lines 48-51).

Regarding Claim 11, Groen et al. discloses that the oscillator (710) is responsive to a loop filter (720 and 130), and the step of controlling the loop filter as a function of said plurality of operating parameters (720 is controlled by the Compensation Control Unit 732, controlling based on operating variations (operating parameters)).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Groen et al. in view of Isoda (US 6642780).

Regarding Claim 15, Groen et al. discloses an electronic device (PLL), comprising: at least one semiconductor chip containing (Col.1, lines 13-18) a controlled phase locked loop system (700) that includes an oscillator (710) responsive to a control parameter (VCO-C) and at least a portion of a control system (735 and 738 in 730) adapted for controlling (adjusting center frequency) said oscillator, said control system (730) comprising: at least one state machine (controller 732) adapted for substantially centering said control parameter as a function of said plurality of operating parameters (Col.2, lines 46-61, see also Col.2, lines 1-5, 15-16).

However, Groen et al. does not expressly disclose a plurality of sources for providing a plurality of operating parameters (operating variations) to which the state machine (controller 732) operatively connected.

Isoda disclose in Figure 1 that the voltage detector 42 and temperature sensor 43 are connected to the controller 24. As would have been well known in the art, such a configuration is used to compensate the operating variations such as power supply voltage variation or temperature variation in the system.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to connect sources (sensors) of operating variations to the Compensation Control Unit 732 to control the variations because such a provision would have provided the benefit of compensation for the operating variations as taught by Isoda.

Regarding Claim 18, Groen et al. discloses that the controlled oscillator system has a topology (730 and 720) and said at least one state machine (732) dynamically (PLL functionality is dynamic) changes said topology (730 and 720) so as to substantially center said control parameter ("the control voltage is set to zero" for the center frequency adjustment; Col.2, lines 48-51).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Groen et al. in view of Isoda (US 6642780).

As noted above in the Claim 10 rejection, Groen discloses a method of controlling a phase locked loop (700) having a setup (PLL Process Variation Compensation Unit 730, Loop Filter Bypass 720) and controlled oscillator (710) using a control parameter (control voltage, VCO-C), comprising the steps of: varying the setup of the phase locked loop as a function of a plurality of operating parameters (Col.2, lines 46-61, see also Col.2, lines 1-5, 15-16); and substantially centering the control parameter to a pre-selected value ("the control voltage is set to zero" for the center frequency adjustment; Col.2, lines 48-51).

However, Groen et al. does not expressly disclose environmental parameters and a step of collecting the environmental parameters before adjusting the PLL.

Isoda discloses in Figure 1 sources of environmental parameters showing the voltage detector 42 and temperature sensor 43. As would have been well known in the art, such a configuration is used to compensate the environmental variations such as power supply voltage variation or temperature variation in the system.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the sources (sensors) of environmental parameters to the Compensation Control Unit 732 to control the environmental variations because such a provision would have provided the benefit of compensation for the environmental variations as taught by Isoda.

As for the “a step of collecting the environmental parameters before adjusting the PLL”, the step is required for the compensation of environmental variation because the compensation is based on the environmental data.

### ***Allowable Subject Matter***

Claims 1-9 are allowed.

Claims 13-14, 16, 17, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the best prior art of record, Groen et al., taken alone or in combination of other

references, does not teach or fairly suggest a measurement device for measuring the control parameter (Claims 1-9, 14, 16, 17), or a multi-stage oscillator (Claim 19), or a power-on-reset history buffer (Claims 13, 20).

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

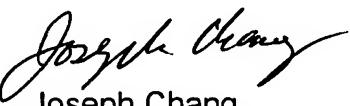
Humphreys discloses compensation for oscillator tuning gain variation in a PLL.

Shibahara et al. discloses a PLL with a calibration circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Chang whose telephone number is 571 272-1759. The examiner can normally be reached on Mon-Fri 0700-1730.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph Chang  
Patent Examiner  
Art Unit 2817

JC